



PIER Energy System Integration Program Area

Sagging Line Mitigator (SLiM)

Contract #: 500-98-042

Contractor: Material Integrity Solutions, Inc.

Subcontractors: Power Technology Consultants, LLC: Dariush Shirmohammadi, Ph.D. : Expert Power Engineering Consultant

Contract Amount: \$900,000

Match Amount: \$303,920

Contractor Project Manager: Manuchehr Shirmohamadi (510) 594-0300

Commission Contract Manager: David Chambers (916) 653-7067

Status: Completed

Project Description:

The purpose of the SLiM project is to develop and test a sagging line mitigator to automatically counteract the sagging of high voltage transmission lines due to high ambient temperature and current flows. The product to be developed has the potential to revolutionize the treatment of sagging overhead transmission lines, instead of retrofitting existing lines or the construction of new lines. SLiM will significantly reduce the risk of forest fires and brownouts caused by sagging lines, increase the efficiency of energy transfer, delay the need for additional line capacity and delay the construction of new lines. Used on new lines, this product will allow reduced tower height and/or increased distance between towers.

This project supports the PIER Program objectives of:

- Improved reliability and quality of California's electricity system by reducing the risk of brownouts (the curtailment of electric deliveries due to line constraints) and power supply interruptions.
- Improved safety of California's electricity by significantly reducing the risk of electrocution and fires caused by sagging transmission and distribution lines.
- Reduced environmental and public health risks/costs of California's electricity system by avoiding the need to build additional transmission towers.

Actual Outcomes:

1. Successfully completed design, development and analysis work for the SLiM device.
2. Conducted successful rigorous prototype testing for applicability proof of concept and design refinements.
3. Develop manufacturing plans for the SLiM device.

Project Status:

The project has been completed. The final report tracking number is "P500-02-074F" and has been published at the following address: please right click on

www.energy.ca.gov/pier/final_project_reports/500-02-074f.html